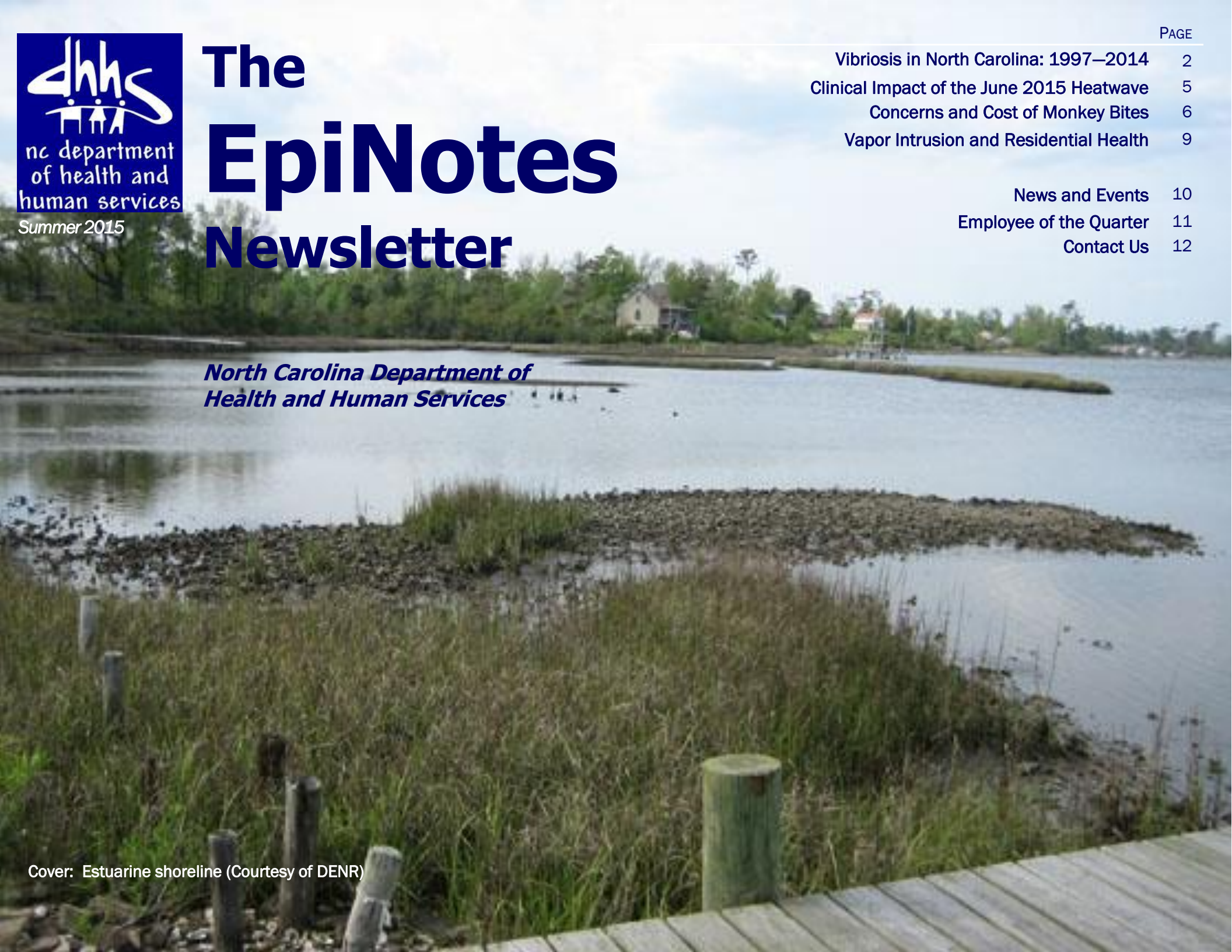
The EpiNotes Newsletter

Summer 2015

North Carolina Department of Health and Human Services

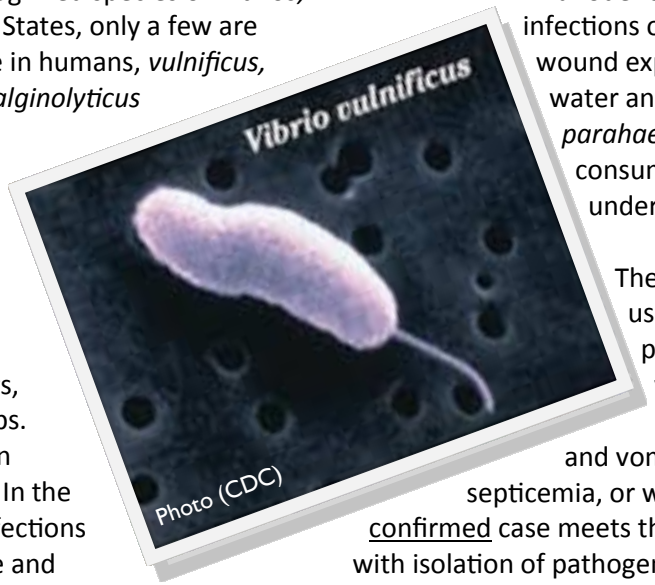


Cover: Estuarine shoreline (Courtesy of DENR)

The Epidemiology of Vibriosis Infections in North Carolina: 1997—2014

Mounika Bazar; Aaron Fleischauer, PhD; Chris Pierson; Nirmalla Barros, PhD; and Carl Williams, DVM.

Vibrio infections are the leading cause of deaths linked to under-cooked seafood in the United States. There are more than 200 recognized species of *Vibrios,* however, in the United States, only a few are known to cause disease in humans, *vulnificus, parahaemolyticus* and *alginolyticus* being the major ones. Infections are often acquired from exposure to sea water or eating raw oysters because the bacteria lodges in the tissues of mollusks such as oysters, clams, mussels and crabs. Typically, the incubation period is 4 to 92 hours. In the United States, *vibrio* infections are nationally notifiable and account for an estimated 80,000 illnesses, 500 hospitalizations and 100 deaths each year[1,2].



In North Carolina, disease reports are categorized into *Vibrio vulnificus* infection and *vibrio* other infection (other than *vulnificus* and toxigenic *cholerae*). Vibrio species can cause a variety of clinical syndromes, including gastroenteritis, wound infection, fever and septicemia. By decreasing order of occurrence, the three distinct syndromes of *V. vulnificus* infections are wound infection, septicemia and GI tract infections[3], whereas, the three distinct syndromes of *V. parahaemolyticus* infections are GI tract infections, wound infection and septicemia[4]. Wound infection is severe in people with liver disease or immunodeficiency. *V. vulnificus* infections often occurs following wound exposure to contaminated water and most *V. parahaemolyticus* cases report consumption of raw or undercooked seafood.

The clinical case definition used for surveillance purposes is an infection of variable severity characterized by diarrhea and vomiting, primary septicemia, or wound infections. A confirmed case meets the clinical case definition with isolation of pathogen from a clinical specimen; a probable case is a clinically-compatible case that is linked to a confirmed case but does not meet the laboratory criteria for diagnosis.

We extracted vibriosis case data for 1997 to 2014 from NC EDSS (North Carolina Electronic Disease Surveillance System) to obtain demographic, clinical and epidemiologic information. The NC EDSS investigation form includes data on demographics (age, sex, race, county of residence), clinical information (symptoms, duration of illness, pre-existing medical conditions such as liver disease, diabetes and other underlying conditions, whether the patient was hospitalized and health outcomes) and epidemiologic information (recent travel information, seafood exposure and contact with water). Data were analyzed using SPSS 19. Chi -square tests were used to compare the health outcomes and risk factor proportions among *V. vulnificus* and other *V. spp*.

A case was defined as foodborne if the patient reported seafood consumption/ handling as the only exposure and as waterborne if the patient reported water exposure (with or without pre-existing or sustained wound(s)) as the only exposure.

Over a span of 18 years (1997 – 2014), a total of 334 cases of vibriosis were reported to local health departments. Of these, 72% were male, 52% were over 50 years of age, and 81% were white, non-Hispanic. Most cases (54%) were residents of the Coastal region of the state, followed by Mountain (37%), and Piedmont (10%). The most frequent species identified by culture were *V. parahaemolyticus*, (29%), *V. vulnificus* (26%), *V. alginolyticus* (18%) and *V. fluvialis* (9%) followed by other less common species. Fever, nausea and cellulitis were more likely with *vulnificus* infections and fever, nausea, diarrhea, abdominal cramps were more characteristic of *parahaemolyticus* infections. Diarrhea was significantly more common among cases with *parahaemolyticus* (47%) infections when compared with *vulnificus* cases (24%; $p<0.05$). (Table 1).

Pre-existing liver disease and immune-suppressing conditions were significantly more common among persons with *V. vulnificus* infections (22% *versus* 3%; 44% *versus* 18%; respectively p<0.05) compared with person with *V. parahaemolyticus* infections. No difference was observed in persons with diabetes. Hospitalization was also more common among cases with *V. vulnificus* (56%) infections compared with *V. parahaemolyticus* (45%) and other species. Among the 19 deaths, 18 occurred in patients with *V. vulnificus* infections (case fatality rate of 21%) and one in patient with *V. parahaemolyticus* infection (case fatality rate of 1%). Hospitalizations and case-fatality rates were observed to be lower than the national rates.

Other risk factors were mostly similar when comparing *V. vulnificus* with *V. parahaemolyticus* and consistent with national data: 54% of cases were foodborne and 37% were non-foodborne (unknown in 9%). Water exposure with pre-existing or sustained wound(s) differed significantly though, with 30% in *vulnificus* infections *versus* 20% among persons with *parahaemolyticus* infections, p< 0.05. No significant difference was found when considering water exposure alone (7% in both), wound infection (7% *versus* 4.2%), shell fish consumption/ handling (45% *versus* 52%), finfish consumption/ handling (5% *versus* 2%). (Table 2).

Vibriosis is seasonal. Incidence peaks annually in June, July and August; twice as many cases occur in summer than non-summer months and a second peak was observed in November (Figure 1). There appears to be a very modest increasing trend over the study period. In 2012 however, a marked increase in incidence was observed for reasons unknown. (Figure 2).

Table 1. Demographics among persons with vibriosis.

Demographics	N=334	%
Age:		
0-10	29	8.7
11-20	24	7.2
21-30	24	7.2
31-40	35	10.5
41-50	49	14.7
51-60	52	15.6
61-70	57	17.1
71-80	46	13.7
81-90	18	5.3
Gender:		
Male	240	71.8
Female	91	27.3
Unknown	3	0.9
Race/Ethnicity:		
White (NH)	269	80.6
Hispanic	5	1.5
African American	29	8.7
Asian	8	2.4
American Indian	5	1.4
Unknown/other	18	5.4
County of Residence:		
Coastal	179	53.6
Piedmont	33	9.9
Mountain	122	36.5
Vibrio subtype:		
parahaemolyticus	96	28.7
vulnificus	86	25.8
alginolyticus	61	18.3
fluvialis	26	7.8
hollisae	13	3.9
mimicus	8	2.4
damsela	5	1.5
cholerae	5	1.5
cholera non O1	14	4.2
harveyi	2	0.5
unknown	18	5.4
Hospitalized? (Yes)	143	42.8
Died? (Yes)	19	5.7

Discussion:

While reported vibriosis infections are relatively rare in North Carolina, the illness can be serious and is often preventable. In North Carolina as elsewhere, *V. vulnificus* has a higher case fatality rate than other vibrio species; however the case fatality rate observed in North Carolina was lower than that reported in national averages (20% v. 32%). Among reported cases, older white males tend to be more at risk for infection, possibly as a result of higher risk associated with occupation or dietary choices. Pre-existence of co-morbid conditions likely increases the risk of severe vibriosis infection, particularly diabetes, liver disease or other immune-suppressing conditions (N. A. Daniels, 2011). Co-morbid liver disease and immune suppressing conditions increase the risk of hospitalization and death. *V. vulnificus* infections are known to be more severe than other species, but nearly 43% of all reported vibriosis cases were hospitalized.

The seasonality of vibriosis suggests that marine and estuary water temperatures are an important factor in the epidemiology of the disease. It is also associated with a behavioral-dependent exposure; an increased number of people take their coastal vacation in the summer months. Clinical information for cases before 2008 was not available for this study, as web-based surveillance was not introduced until 2008. Data completeness has significantly improved after the implementation of NC EDSS, enhancing our ability to characterize reportable diseases. However our surveillance has some limitations. For example, many potential cases do not receive diagnostic testing which leads to under-reporting particularly for those *Vibrio* species that cause milder illness.

Recommendations: Infections caused by *Vibrio* species can be prevented by thoroughly cooking sea food, especially oysters and clams. Persons who are immunocompromised, especially those with liver disease or HIV, should avoid eating raw or undercooked shell fish.

Wound infections can be prevented by appropriate wound care and avoiding exposure of open wounds to sea water and marine environments. Fishermen and persons handling shell fish should wear protective gloves to decrease the risk of puncture wounds.

Restaurants should always provide food advisories to their customers about undercooked or raw sea food. People should be educated about vibriosis symptoms and be encouraged to inform their health care provider if they become ill following estuarine and/or shellfish exposure.

Table 2. Epidemiologic Risk Factors and Vibriosis by Species

Risk Factor	*V. vulnificus* (N=86)	*V. parahaemolyticus* (N= 96)	*V. spp.* Other (N=134)	Comparison
Water exposure	6 (7%)	7 (7.3%)	24 (18%)	NS
Water exposure with pre-existing wound	26 (30.2%)	19 (19.8%)	23 (17%)	p<0.05
Presence of wound (no exposure to risk factors)	6 (7%)	4 (4.2%)	8 (6%)	NS
Shell fish consumption/handling	39 (45.4%)	50 (52.1%)	46 (34%)	NS
Fin fish consumption/handling	4 (4.7%)	2 (2.1%)	3 (2%)	NS
Diabetes	15 (17.4%)	13 (13.5%)	14 (11%)	NS
Liver disease	19 (22.1%)	3 (3.1%)	1 (0.8%)	p<0.05
Immuno-suppressed	38 (44.2%)	17 (17.8%)	36 (27%)	p<0.05

Figure 1. Seasonal distribution of Vibriosis cases by month of diagnosis, North Carolina, 1997 – 2014.

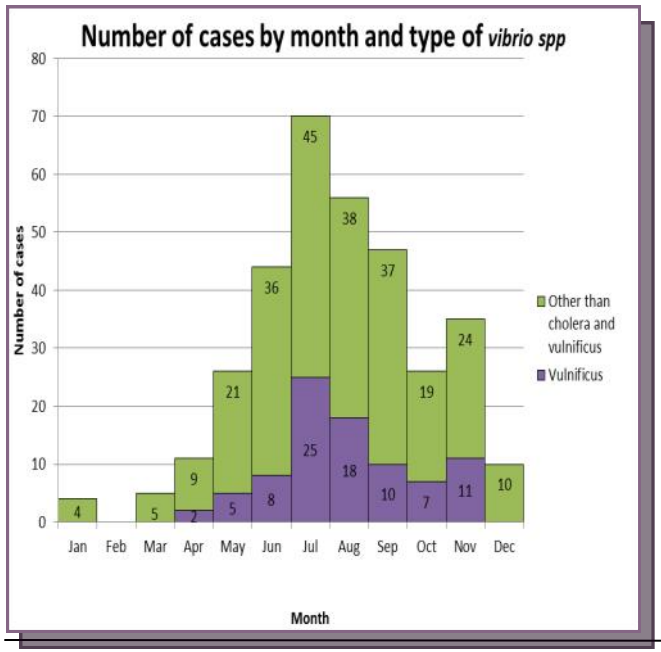
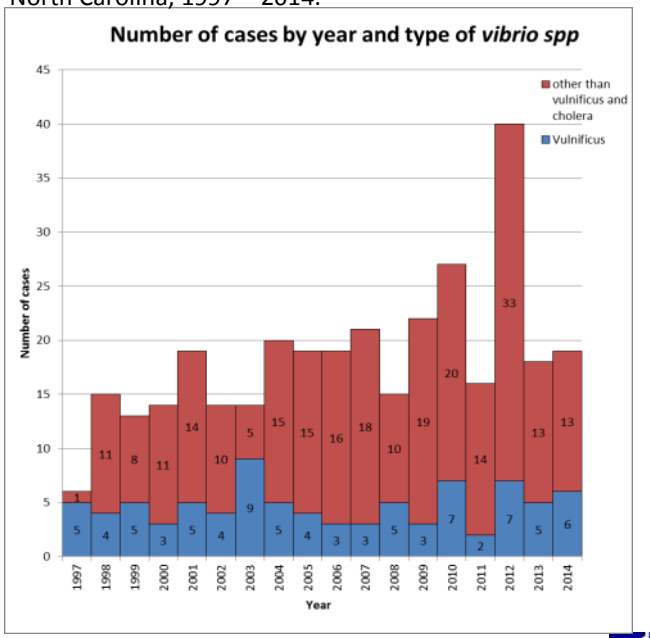


Figure 2. Vibriosis cases reported by year of diagnosis, North Carolina, 1997 – 2014.



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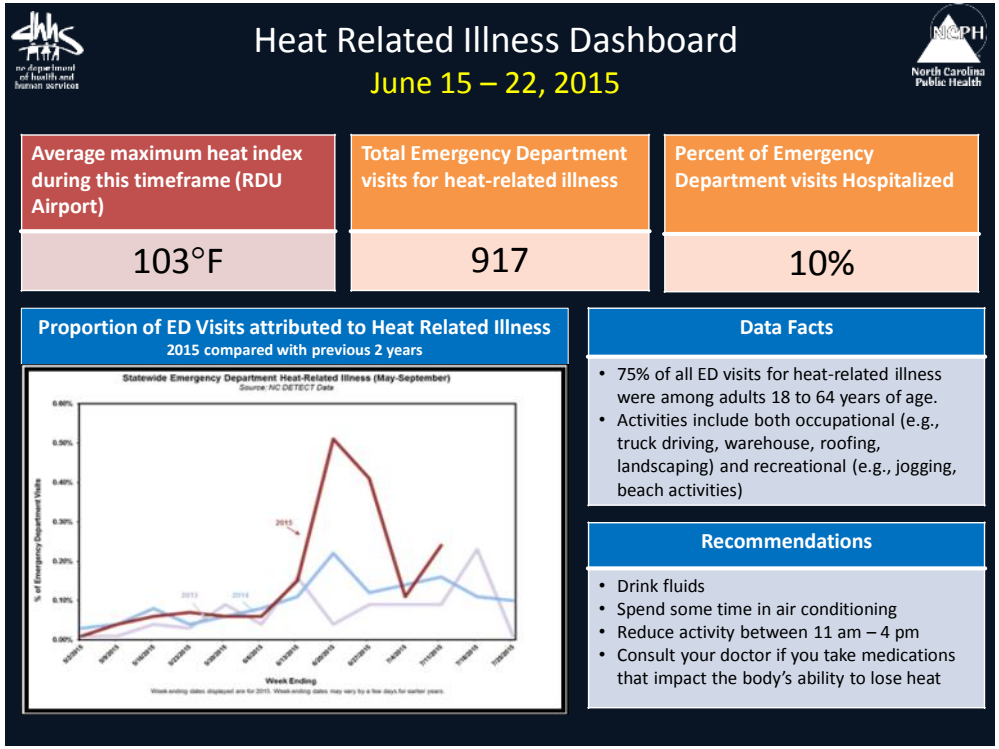
June 2015 Heatwave Makes Big Impact

Lauren Thie, MSPH & Sara Smith, MA

Heatwaves are common in North Carolina most summers. During June 15-24, 2015 there were 10 consecutive days of heat advisories (heat index of 105°F or greater) issued by the U.S. National Weather Service offices serving North Carolina. Over the 10 day heat wave, 917 emergency department (ED) visits for potential heat-related illness were observed. The majority of ED visits occurred in the Piedmont and Coastal regions. This number of ED visits far exceeded what is expected during a typical summer period, and was much greater than the same period over the previous two summers. A dashboard was developed in response to highlight the clinical impact the heatwave had on North Carolinians (Figure 1).



Prevention: Heat-related illness can be prevented if proper precautions are followed. Some evidence-based messages include[1]:

- Increase fluid intake
- Reduce activity during the hottest part of the day (typically 11 am – 4pm)
- Spend some time in air-conditioning
- Consult your physician if you take medications that reduce the body's ability to cool itself (e.g., blood pressure medications, psychological medications).

Acclimatization plays an important role in health and played a major role in this year's heatwave. It takes the body about 7-14 days to acclimate to high temperatures. Since this year's heatwave came in early June, prior to any periods of high temperatures, it was especially dangerous. Acclimatization also plays an important role in health protection for those in outdoor professions. Those new to the job or recently returning from leave will need to acclimate to the heat before working the same amounts as those who have been working outside continually this summer[2].

Research indicates the combination of poor air quality and heat exposure creates particularly dangerous health impacts, more so than either threat individually. Typically, days with poor air quality are days with high heat. In response, heat illness messaging now includes information on poor air quality. In collaboration with the North Carolina Department of Environment and Natural Resources, Division of Air Quality, a flyer was developed to outline ways older adults can protect their health from air pollution and heat. Approximately 2,000 flyers have been distributed to older citizens (over the age of 65) and those adults living with disabilities by the Department of Health and Human Services, Division of Aging & Adult Services in conjunction with Operation Fan Heat Relief.

Each year from May through September, weekly heat-related illness reports are distributed to our key stakeholders and posted on the OEEB website. To join this listserv, please contact Lauren Thie at lauren.thie@dhhs.nc.gov.

For more information on preventing heat-related health issues, please visit: http://publichealth.nc.gov/chronicdiseaseandinjury/heat.htm

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Public Health Concerns and Costs of Monkey Bites in North Carolina

Marilyn Goss Haskell, DVM
& Carl Williams, DVM

Introduction

In North Carolina, 17 non-human primate (monkey) bites were investigated by the Communicable Disease Branch over a five year period during February 2011 to May 2015. Private ownership and exhibitions of monkeys are a public health concern for a number of reasons. Monkey behavior is unpredictable with complex social organization within each species that often results in bites or attacks to owners and other persons that may approach them. Bites and other injuries are associated with an increased risk of transmission of infectious diseases, some fatal to humans, with ensuing emotional distress and medical costs to the patient. Monkey attacks can also cause severe trauma and potentially life-threatening physical injuries .

Legal Status

Importation of monkeys into the United States has been federally restricted since 1975. Due to the risk of infectious disease Monkeys may only be imported for scientific or educational purposes (http://www.cdc.gov/importation/laws-and-regulations/nonhuman-primates/nprm/index.html).

This federal regulation, however, never addressed ownership, possession and keeping of monkeys already in the United States. That issue was left to the states to develop legislation and has resulted in a patchwork of state laws across the country. Exact numbers are difficult to know but Born Free USA and the Captive Wild Animal Protection Coalition report that 21 states ban ownership or possession of monkeys while 11 states (including North Carolina) have no state law regulating their ownership. The remainder of the states have some intermediary position allowing possession with appropriate permitting (http://www.bornfreeusa.org/downloads/pdf/StateLawMaps_PRIMATES.pdf).

In North Carolina, legislation has been introduced over the years to regulate exotic animals. NC Senate Bill 954 (1997) would have created a registry of exotic animals for community awareness. NC Senate Bill 1032 (2005) directed a commission to study the need to protect the public from the health and safety risks posed by inherently dangerous animals and also proposed a means to provide that protection to the public while protecting the welfare of these animals. NC House Bill 554 (2015) was introduced to prevent persons from possessing dangerous wild animals. This bill is currently under review.

Nonetheless there are two general statutes, NCGS 153A-131 and 160A-187, that allow a county or city, respectively, to develop an ordinance to regulate, restrict, or prohibit the possession or harboring (within the county or city) of animals which are dangerous to persons or property. An internet search of county ordinances, conducted in November 2014, revealed that about 42 of 100 N.C. counties have ordinances that restrict, either absolutely, with permit or specified confinement, monkey ownership.

Medical and Public Health Response

The human resources and time expended during a monkey bite investigation are significant in comparison to a routine dog or cat bite investigation. While very specific information about the disease risks and human treatment protocol for dog and cat bites is available, similar information about treatment of monkey bites and disease risks is often lacking. Investigations often involve federal, state and local health department staff as well as private veterinarians (*See algorithm, page 8).* Enactment of comprehensive legislation that prohibits private monkey ownership would help eliminate the risks and expense to the public and owners associated with bite incidents and potential for disease transmission and allow government resources to be focused on core functions and programs.

Rabies and Monkeys

Rabies has rarely been reported in monkeys in the wild, and has only been sporadically associated with cases in humans[1]. Like humans, rabies virus infection in monkeys is rare. Monkeys born in captivity in the United States are considered low risk. In Florida, between 1957 (the beginning of the raccoon rabies outbreak in Florida) and 1975, 636 monkeys and four chimpanzees were tested at public health laboratories and all were negative[2]. Free ranging, macaque monkeys that have been introduced into Florida's Ocala Springs area, where raccoon rabies is endemic, have never been diagnosed with rabies. However during 1991 to 1998, a new Rabies virus variant has been identified in humans in Ceara, Brazil, that is not genetically or antigenically related to any bat or terrestrial variant in the Americas. The Marmoset monkey appears to be the reservoir[1].

Herpes B Virus in Macaques

Old World monkeys of the genus *Macaca* (Macaque monkeys) are of particular concern because they are the natural host of *Macacine herpesvirus* (B virus). B virus infection is usually asymptomatic in macaques or may present as a mild herpes simplex virus infection, but can cause a fatal infection in humans. From 30% to 80% of rhesus macaques are seropositive, the infection is lifelong with intermittent reactivation and shedding, particularly when the monkey is stressed or immune-compromised[3,4].

Courtesy CDC

Herpes B Transmission and Infection in Humans

B virus is present in the saliva, feces, urine, genital tissues and nervous tissue of infected macaques. Transmission to humans occurs through bites, scratches or when infected tissues or fluids contact broken skin or mucous membranes. In research facilities, infection has resulted from needle sticks and cuts or scratches from sharp edges of contaminated cages. There has been only one human to human transmission reported. B Virus infections are rare in humans. The disease in humans may present up to five weeks following exposure, however, the average incubation period is 3 days to 3 weeks. Death can occur in up to 80% of persons if untreated[5].

Recent incidents in NC

Three species of monkeys were responsible for 17 North Carolina bite-related incidents: 11 were Macaques (genus *Macaca*); and six (three each) were new world monkeys, Capuchins and Marmosets. Eleven incidents involved privately-owned pets, four occurred with monkeys housed at non-Association of Zoos and Aquariums accredited (AZA) zoos, and two were on exhibition.

Monetary Costs

Costs to the Patient

In addition to the large expenditures of time and emotional distress to the patient for necessary medical treatment, monkey bite incidents result in a sizeable financial burden for both patient and owner. In 2010, a survey of several North Carolina emergency departments (ED) demonstrated an average cost of approximately $10,000 for a complete regimen of rabies PEP (NC DETECT data, 2009). According to the North Carolina State Laboratory of Public Health, the cost of rabies biologics (in July 2015) for a 160 pound person (healthy and not previously vaccinated) is $3,348 ($2,388 for human rabies immune globulin and $960 for four vaccine doses ($240 each)). Prior estimates revealed the mean total cost of a suspected human rabies exposure to be $3,688, the direct costs per case were $2,564, and the indirect costs were $1,124 of that total. About one third of the total cost for suspected human rabies exposure was attributed to indirect costs (e.g., lost wages, transportation, and day-care fees), most of which were not reimbursable to the patient[6]. These costs are not inclusive of ED expenses, wound care that may be ongoing with possible surgery, and tetanus post-exposure prophylaxis. Additionally, if the monkey is a macaque monkey, the patient will have Herpes B virus serology submitted to the National Herpes B Virus Laboratory at Georgia State University at $60 per sample, and the cost of prescribed antiviral drugs.

Costs to the Owner

A local health director can order a monkey to be held in quarantine following a bite incident. Owners may be required to pay boarding fees that could range up to $50.00/day as well as B virus serology at $60.00/sample.

Conclusion

While monkey bite incidents are rare; they typically lead to exorbitant medical and legal costs for both victims and owners. Additionally, victims can be exposed to herpes B virus, which has the potential to be fatal if untreated. Monkey ownership poses serious health risks, above and beyond those from dogs and cats, that must be considered.

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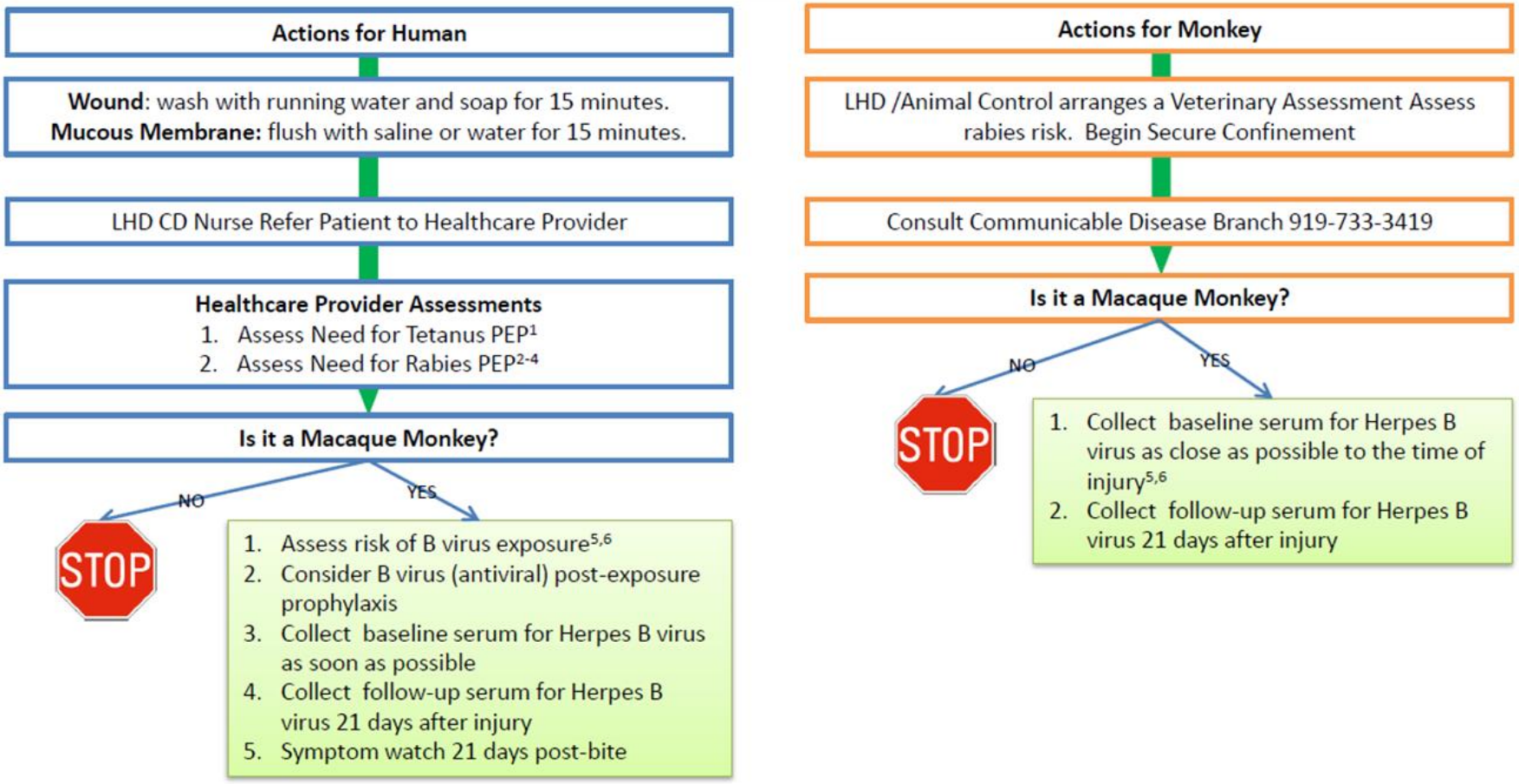
Public Health Actions for Monkey Bites.

Algorithm represents minimum actions. Additional actions especially for Macaques and their victims may be required.



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Vapor Intrusion from Soil May Affect Residential Health

Beth Dittman, MS; Sandy Mort, MS; and Mercedes Hernández-Pelletier, MPH

The Health Assessment, Consultation and Education (HACE) Program within the Occupational and Environmental Epidemiology Branch works to determine public health impacts associated with exposures to toxic substances released into the environment throughout North Carolina. Exposure to hazardous chemicals can occur via multiple pathways, but vapor intrusion has received increasing attention as a potential route of human exposure to hazardous volatile compounds. ***Vapor intrusion (Figure 1) occurs when volatile chemicals present in soil or groundwater emit vapors that migrate through soil and into indoor spaces, such as homes or commercial buildings.*** It is important to determine if vapor intrusion is occurring when investigating sites with contaminated groundwater plumes that extend near or under buildings. Recently, HACE staff assessed the health risks to residents of an apartment complex in Greensboro, NC in a suspected vapor intrusion situation.

A storage facility, located in Greensboro, NC (Guilford County), is situated on the site of a former dairy operation. Prospective developers, in collaboration with the N.C. Department of Environment and Natural Resources (DENR) discovered groundwater contamination of trichloroethylene (TCE) around the area of the former dairy operation's fleet management facility. TCE is an industrial chemical often used as a degreasing agent, but is also an ingredient in glues, paint removers, stain removers, and other household products. It is classified by the U.S. Environmental Protection Agency (EPA) as a human carcinogen with a mutagenic mode of action, meaning that it can permanently damage a person's DNA. TCE may also cause adverse health effects of the immune system, as well as developmental effects in exposed fetuses. The TCE-contaminated groundwater was found to extend beyond the property line and under a neighboring apartment complex, resulting in potential exposure for apartment residents. N.C. DENR initiated a vapor intrusion investigation which revealed a need for follow-up indoor air testing of the ground-floor apartments. N.C. DENR asked HACE staff to provide a TCE level in indoor air that is safe for residents' health. After reviewing the toxicological literature, HACE staff provided an action level above which it is recommended that people be removed immediately from continuous exposure to TCE in indoor air.

Figure 1. Migration of Soil Vapors to Indoor Air

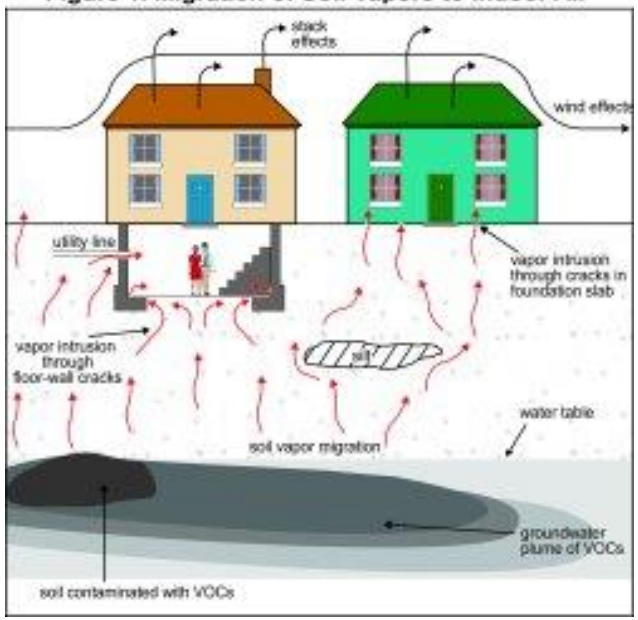


Photo (US EPA)

In May 2015, eight ground-floor apartment units were tested for TCE levels in indoor air. N.C. DENR contractors placed Radiello™ air samplers in each apartment for seven days. Two apartments had TCE levels higher than the HACE-recommended action level. Immediately, U.S. EPA Emergency Response program contractors took 24-hour indoor air samples using Summa™ canisters to confirm the DENR findings, and placed activated carbon air filtration units in the two affected apartments. Follow up sampling performed by U.S. EPA contractors confirmed that the air filtration units reduced the TCE concentrations below the action level within a matter of days, ensuring that apartment residents were no longer exposed to TCE in their homes at levels that could adversely impact their health.

A long term remedial strategy is needed to ensure all apartment residents are protected from TCE exposure through the vapor intrusion pathway. Air filtration units are considered only an intermediate remedial strategy, as the activated carbon filters can become saturated and need to be replaced periodically. U.S. EPA contractors are monitoring air filtration unit performance and will conduct maintenance on the units as necessary. HACE staff continue to watch the situation closely and will assess any new data that is collected to determine if there is any threat to the health of the residents.

Reference:

US Environmental Protection Agency: http://www.epa.gov/oswer/vaporintrusion/basic.html

NEWS

CD Program Alert

The Foodborne Team would like to share a few important updates. We would also like to thank you all for the hard work you do each day in ensuring the health and well-being of your communities and the people who live and work in them! Recent updates to the North Carolina Communicable Disease Manual are highlighted here.

There has been a change to the case definition for **Campylobacter** infection. The suspect case classification is no longer included. The only two classifications are now: **confirmed**, when there is isolation (culture) of *Campylobacter spp*. from a clinical specimen and **probable**, when there is either an epi-linked case or detection of the *Campylobacter spp*. from a clinical specimen using a culture independent diagnostic test (CIDT, such as antigen test or PCR).

The **Shigellosis** LHD Disease Investigation Steps and the Shigellosis Control Measures for Childcare Centers and K-12 Schools have been updated in the Communicable Disease Manual. These changes are based on recommendations in the 20th Edition of the Control of Communicable Diseases Manual.

Please read through both of these documents. If any questions arise after reading through the updated documents, please call one of the members of the Foodborne Team. Nicole Lee can be reached at 919-715-1162 and Vanessa Greene can be reached at 919-715-3685.

There are four specific conditions, Vibriosis, Typhoid fever, Paratyphoid fever and Listeriosis, which require supplemental investigation forms. The data collected on these forms are should be completed in addition to the NC EDSS part 2 form, and attached to the NC EDSS event or faxed to the CD Branch. When these forms need to be completed either a link to the specific form will be in the dashboard or the form itself will be in the attachments. The forms can also be found on the CDC's website.

Listeria: http://www.cdc.gov/listeria/pdf/ListeriaCaseReportFormOMB0920-0004_alfalfa.pdf

Typhoid and paratyphoid: http://www.cdc.gov/nationalsurveillance/PDFs/typhi-surveillance-form.pdf

Vibrio: http://www.cdc.gov/nationalsurveillance/PDFs/CDC5279_COVISvibriosis.pdf

Regional Isolation and Quarantine Workshops

PHPR is planning follow-up workshops to the 2013 Isolation and Quarantine regional trainings tentatively scheduled for November—December, 2015. The objectives for the workshop include:

- Describe the legal authorities and jurisdictional responsibilities of isolation and quarantine.
- Illustrate lessons learned from the Measles and Ebola outbreaks.
- Define and engage local, state and federal partners involved in isolation and quarantine.
- Conduct and discuss a table-top exercise involving communicable disease control measures.

Pictured from L-R: Dr. Julie Casani, Shanae Godley, and Dr. Megan Davies

Employee of the Quarter: **Shanae Godley**

Shanae is a preparedness planner for the Eastern Regional Office in PHP&R. Her work has focused on documenting progress by Local Health Departments while providing them critical next steps in developing their county programs to address the preparedness capabilities. Shanae used her prior experience in Science, Technology, Engineering, and Math (STEM) education to develop a rubric which breaks down critical next steps and documents progress. She coordinated with planners in the other regional offices to develop the rubric for over 50 priority elements within the 15 preparedness capabilities. Each of the specialty capabilities required input from SME's such as Epi/Surveillance, Medical Surge, Fatality Management, Worker Safety, etc. She also coordinated a team of PHP&R planners, PHP&R SMEs and local health department preparedness coordinators to review the rubric for it's usefulness and ease of completion. Rubric roll-out required several days of training which was conducted in conjunction with the Medical Countermeasure Operational Readiness Review roll-out.

The first set of data was collected in February 2015 and her team is currently analyzing the results. Local Health Departments will continuously use the rubric to develop their local programs and see what next steps need to be taken. The reports will be used to identify priority gaps and places to focus program assistance.

The rubric has resulted in the first real-time assessment of the status of preparedness in the state. Because it is a standard model, it is being looked at by other partners in the state as a potential tool for their own adaptation and has created interest at CDC for national use.

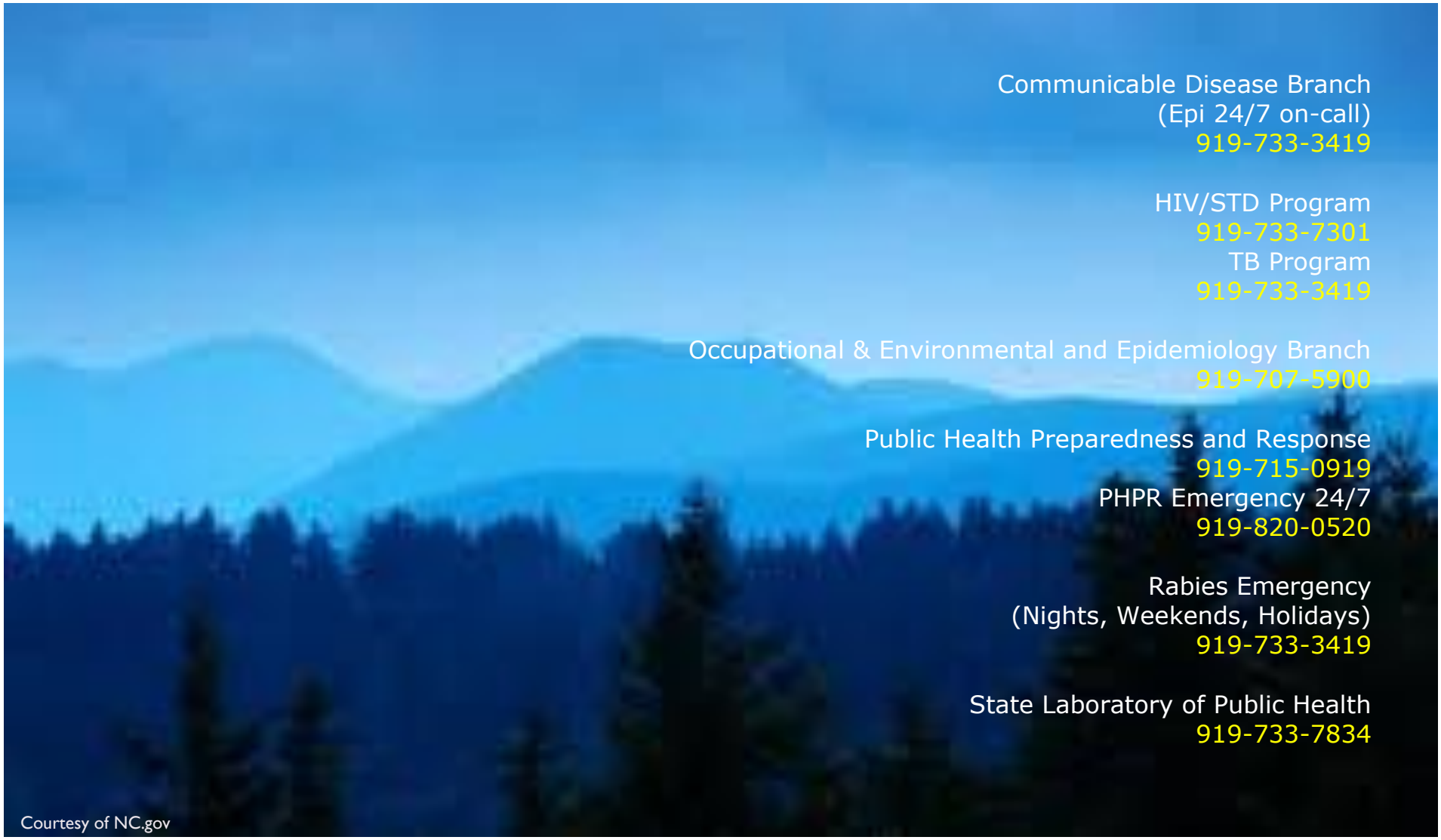
Most importantly, because of her vision and leadership on this project, the activity has crystalized the team of planners in PHP&R and has nurtured relationships with the local health department staff. This has increased morale, supported professional growth and resulted in a sense of accomplishment by everyone involved.

Davidson County Salmonellosis Outbreak One of Largest in State History.

During June 2015, a popular BBQ restaurant, Tarheel Q, located in Lexington, NC was the source of *Salmonella typhimurium* infections for more than 275 patrons. A joint investigation identified improperly cooked pork product as the likely vehicle for disease transmission. Pork product tested at the State Laboratory of Public Health demonstrated an identical *Salmonella* strain with testing performed on human cases. After control measures were implemented and two incubation periods passed, the outbreak officially ended on August 8, 2015.

Dr. Jessica Rinsky joins the Communicable Disease Branch as the 35th Epidemic Intelligence Service (EIS) Officer.

Jessica Rinsky, PhD is our newest EIS Officer to be assigned from CDC to the Medical Consultation Unit, Communicable Disease Branch. Jessica recently completed her PhD in Epidemiology from the University of North Carolina Gilling's School of Global Public Health. During her two-year fellowship, she will monitor surveillance data, conduct outbreak investigations, and support local health departments by serving as an on-call epidemiologist.



EpiNotes Editor: Aaron Fleischauer, PhD MSPH

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